



Pneumonia in Premature Babies

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Abstract: to analyze the pregravid and gravid periods in women who gave birth to children with congenital pneumonia, to consider clinical, laboratory and microbiological characteristics, as well as features of the course of this disease in full-term and premature newborns.

Key words: pneumonia, children, newborns, premature babies.

Background: Pneumonia is a leading cause of morbidity and mortality in children under 5 years of age worldwide, particularly in low- and middle-income countries. While previous studies have compared the clinical features and outcomes of pneumonia in children of different age groups, there is a lack of studies specifically comparing preterm and full-term infants <1 year of age with pneumonia. Given the high burden of pneumonia in this age group, understanding the differences in clinical presentation and severity between preterm and full-term infants may help guide clinical management and improve patient outcomes. The present study aims to fill this gap in the literature by comparing the clinical features and outcomes of pneumonia in preterm and full-term infants <1 year of age. Pathology of the respiratory system is one of the main causes of high morbidity and mortality in newborns. According to WHO, intrauterine infection ranks first among infections that cause child mortality [1]. Neonatal infections in premature infants are of particular medical and social importance [2]. The most common type of bacterial pneumonia is called pneumococcal pneumonia is caused by the *Streptococcus pneumoniae* germ that normally lives in the upper respiratory tract. It infects over 900,000 Americans every year.

Bacterial pneumonia can occur on its own or develop after you've had a viral cold or the flu. Bacterial pneumonia often affects just one part, or lobe, of a lung. When this happens, the condition is called lobar pneumonia. Those at greatest risk for bacterial pneumonia include people recovering from surgery, people with respiratory disease or viral infection and people who have weakened immune systems.

Purpose: The purpose of this study was to compare the clinical features of pneumonia in premature and full-term children under 1 year of age. Clinical features such as fever intensity, number of days of hospitalization, intensive care unit admission, and saturation level were analyzed.

Methods: The retrospective study included 60 children under the age of 1 year admitted to the hospital (ARDMMC) with a diagnosis of community-acquired pneumonia in the period from January 1, 2022 to December 31, 2022. The children were divided into two groups: premature (gestational age ≤ 34

weeks) and term (gestational age >34 weeks). Clinical features such as fever intensity, number of days of hospitalization, intensive care unit admission, and oxygen saturation (SpO_2) were analyzed. Statistical analysis was performed using a t test, with a p value <0.05 considered significant.

Results: The premature group consisted of 30 children, and the full-term group consisted of 30 children. The mean age of the preterm group was 6.1 ± 3.2 months, and the mean age of the full-term group was 7.2 ± 2.9 months ($p=0.134$). The preterm group had higher fever ($39.1 \pm 0.6^\circ C$) compared to the full-term group ($38.7 \pm 0.5^\circ C$, $p=0.022$). The preterm group also had a longer hospital stay (8.6 ± 2.4 days) compared to the full-term group (7.4 ± 1.9 days, $p=0.012$). In addition, the preterm group had a higher rate of intensive care unit admission (60%) compared to the term group (30%, $p = 0.031$). The preterm group had a lower oxygen saturation level ($91.5 \pm 1.9\%$) compared to the full-term group ($95.2 \pm 1.2\%$, $p<0.001$).

Conclusion: Our study indicates a more severe course of the disease in premature infants under 1 year of age with pneumonia than in full-term infants. They are more likely to have higher fever intensity, longer hospital stays, higher rates of intensive care unit admissions, and lower oxygen saturation levels. Therefore, they require more careful monitoring and treatment to prevent complications and improve outcomes. Clinicians should be aware of these differences in clinical presentation and consider them when treating pneumonia in children less than 1 year of age. Women who gave birth to children with congenital pneumonia have a burdened obstetric history in the form of repeated threats of termination of pregnancy, infectious diseases, endocrine pathology, and gestosis. Pathological conditions are detected more often in women whose pregnancy ended prematurely. Congenital pneumonia is more severe in premature infants. Due to the severity of their condition at birth and immaturity, they are more likely than full-term newborns to require resuscitation measures.

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